

What is claimed is:

1. A method for logically segmenting a plurality of objects in a graphical
5 user interface, the method comprising:
selecting a first set from the plurality of objects;
defining the first set as a first group with a first associated boundary; and
modifying the first group in response to moving a selected entity across
said first associated boundary;
10 wherein the selected entity is an object, a second set, a second group, a
plurality of groups, and combinations thereof within the plurality of
objects.
2. The method of claim 1, wherein moving the selected entity across the first
15 associated boundary occurs when any part of the selected entity is moved across the first
associated boundary in a direction from outside the first group to within the first group.
3. The method of claim 1, wherein moving the selected entity across the first
associated boundary occurs when any part of the selected entity is moved across the first
20 associated boundary in a direction from within the first group to outside of the first group.
4. The method of claim 1, wherein moving the selected entity across the first
associated boundary is done with a drag and drop function.
- 25 5. The method of claim 2, further comprising:
adding all objects of the selected entity which are not already part of the
first group to the first group; and
expanding said first associated boundary to include all objects of the
selected entity which were not already part of the first group.
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6. The method of claim 5, further comprising undefining the second group
and plurality of groups entirely contained within the selected entity by removal of their
associated boundaries.

7. The method of claim 5, further comprising:
subtracting a selected subset from any of the second group and the
plurality of groups, included in the selected entity, from its
corresponding group; and
contracting each group's associated boundary to include only those objects
remaining in that group.
8. The method of claim 3, further comprising:
subtracting all objects of the selected entity which are not already part of
the first group from the first group; and
contracting said first associated boundary to include only those objects
remaining in the first group.
9. The method of claim 8, further comprising moving the first group,
including the first associated boundary, as a whole when the selected entity contains all
objects of the first group.
10. The method of claim 9, further comprising:
selecting the second set from the list of elements; and
redefining the first group so that the subset of elements of the second set
which are common to the first group are no longer included in the first
group.
11. The method of claim 10, wherein only contiguous elements can be
selected.
12. The method of claim 11, wherein redefining the first group comprises:
removing the first associated boundary;
bisecting the first group only when the second set was not adjacent to
either the first upper limit or the first lower limit; and

defining each of the two sets of remaining contiguous elements resulting from bisection of the first group, above and below the second set, as new groups with associated boundaries.

5 13. The method of claim 12, wherein redefining the first group comprises:
truncating the first group by removal of a subset of elements of the second
set which are common to the first group and which are adjacent to
either the first upper limit or the first lower limit; and
10 realigning whichever of the first upper limit or the first lower limit that the
subset was adjacent to, so that the first associated boundary
encompasses only those elements remaining in the first group.

15 14. The method of claim 13, wherein redefining the first group comprises
undefining the first group when the second set contains all the elements of the first group.

20 15. The method of claim 14 further comprising redefining any of the plurality
of groups, which also have elements common to the second set, in the same manner as
the first group.

25 16. An apparatus for logically segmenting a list of elements in a graphical user
interface, comprising:

means for selecting a first set from the list of elements;
means for defining the first set as a first group of contiguous elements
with a first associated boundary having a first upper limit and a first
lower limit; and
30 means for modifying the first group in response to moving a selected
entity across said first associated boundary, wherein the selected entity
is an element, a second set, a second group, a plurality of groups, and
combinations thereof within the list of elements.

17. The apparatus of claim 16, wherein moving the selected entity across said first associated boundary occurs when any element of the selected entity is moved across the first upper limit or the first lower limit in a direction from outside the first group to within the first group.

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18. The apparatus of claim 17, wherein moving the selected entity across said first associated boundary occurs when any element of the selected entity is moved across the first upper limit or the first lower limit in a direction from within the first group to outside of the first group.

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19. The apparatus of claim 18, further comprising:
means for adding all elements of the selected entity which are not already
part of the first group to the first group; and
means for expanding said first associated boundary to include all elements
of the selected entity which were not already part of the first group.

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20. The apparatus of claim 19, further comprising:
means for undefining the second group and plurality of groups entirely
contained within the selected entity by removal of their associated boundaries.

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21. The apparatus of claim 20, further comprising:
means for subtracting a selected subset from any of the second group and
the plurality of groups, included in the selected entity, from its
corresponding group; and
means for contracting each group's associated boundary to include only
those objects remaining in that group.

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22. The apparatus of claim 21, further comprising:
means for subtracting all elements of the selected entity which are not
already part of the first group from the first group; and
means for contracting said first associated boundary to include only those
elements remaining in the first group.

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23. The apparatus of claim 22, further comprising:
means for moving the first group, including the first associated boundary, as a whole when the selected entity contains all elements of the first group.

5 24. The apparatus of claims 23 wherein only contiguous elements can be selected.

25. The apparatus of claim 24, wherein moving the selected entity within the list of elements occurs with one-element shift increments, only when the entity is not
10 crossing any group's associated boundary.

26. The apparatus of claim 25, wherein an adjacent element is displaced in favor of the selected entity to a position on the opposite side of the selected entity when the selected entity is moved toward said adjacent element.

15 27. The apparatus of claim 26, further comprising:
means for indicating movement of the entity across any group's associated boundary by an expansion or contraction of the boundary and not actually moving the entity.

20 28. The apparatus of claim 27, further comprising:
means for undefining the first group by removing the first associated boundary when only one element remains in the first group.

25 29. The apparatus of claim 28, further comprising:
means for moving the first group, including the first associated boundary, as a whole when the selected entity contains all elements of the first group.

30 30. The apparatus of claim 29, wherein a bracket is used to represent each group's associated boundary.

31. The apparatus of claim 30, wherein an icon is used to denote each group.

32. The apparatus of claim 31, wherein selecting said icon also selects the icon's corresponding group.

5 33. The apparatus of claim 32, further comprising:
means for selecting the second set from the list of elements, distinct from the first set;
means for defining the second set as the second group with a second associated boundary having a second upper limit and a second lower limit; and
10 means for redefining the first group when any elements of the second set are common to the first group.

15 34. The apparatus of claim 33, wherein only contiguous elements can be selected.

35. The apparatus of claim 34, wherein means for redefining the first group further comprises:
means for removing the first associated boundary;
means for bisecting the first group only when the second set was not
20 adjacent to either the first upper limit or the first lower limit; and
means for defining each of the two sets of remaining contiguous elements resulting from bisection of the first group, above and below the second group, as new groups with associated boundaries.

25 36. The apparatus of claim 35, wherein means for redefining the first group further comprises:
means for truncating the first group by removal of a subset of elements of the second set which were common to the first group and which are adjacent to either the first upper limit or the first lower limit; and
30 means for realigning whichever of the first upper limit or the first lower limit that the subset was adjacent to, so that the first associated boundary encompasses only those elements remaining in the first group.

37. The apparatus of claim 36, wherein means for redefining the first group comprises:

means for undefining the first group by removing the first associated boundary when the second set contains all elements of the first group.

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38. The apparatus of claim 37 further comprising redefining any of the plurality of groups, which also have elements common to the second set, in the same manner as the first group.

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